We claim:

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- 1. A method for identifying chemosensitizing compounds that reverse non P-gp/non MRP multiple drug resistance in cancer cells exhibiting non P-gp/non MRP drug resistance phenotype comprising administration of a test compound and a chemotherapeutic agent to which cancer cells are resistant and measuring cancer cell survival.
- 2. A method for resensitizing non P-gp/non MRP multiple drug resistant cancer cells to treatment with chemotherapeutic agents to which cancer cells have developed resistance comprising administration of an effective amount of a chemosensitizing reversal agent and a chemotherapeutic agent.
- 3. The method according to claim 2 wherein the chemosensitizing reversal agent is selected from the group consisting of fumitremorgin A, fumitremorgin B and fumitremorgin C.
- 4. The method according to claim 2 wherein the chemotherapeutic agent used is one to which the cancer cells are resistant.
- 5. The method according to claim 2 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin and topotecan.
- 6. The method of claim 3 wherein the chemosensitizing reversal agent is administered prior to, concurrently with, or after administration of the chemotherapeutic agent.
- 7. A method for identifying chemosensitizing compounds that reverse BCRP-mediated multiple drug resistance in cancer cells which exhibit BCRP-mediated multiple drug resistance comprising administration of a test compound and a chemotherapeutic agent to which the cancer cells are resistant and measuring cancer cell survival.
- 8. A method for resensitizing BCRP-mediated multiple drug resistant cancer cells to treatment with chemotherapeutic agents to which cancer cells have developed resistance comprising administration of an effective amount of a chemosensitizing reversal agent and a chemotherapeutic agent.
- 9. The method according to claim 8 wherein the chemotherapeutic agent used is one to which the cancer cells are resistant.

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- 10. The method according to claim 9 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin, and topotecan.
- 11. The method according to claim 8 wherein the chemosensitizing reversal agent is selected from the group consisting of fumitremorgin A, fumitremorgin B and fumitremorgin C.
- 12. The method according to claim 11 wherein the chemosensitizing reversal agent is administered prior to, concurrently with, or after administration of the chemotherapeutic agent.
 - 13. A method of distinguishing P-gp/MRP multiple drug resistance from BCRP or other non-P-gp/non MRP multiple drug resistance which comprises administration of an effective amount of a chemosensitizing reversal agent and a chemotherapeutic agent to which cancer cells are resistant and measuring cancer cell survival.
 - 14. The method according to claim 13 wherein the chemotherapeutic agent used is one to which the cancer cells are resistant.
 - 15. The method according to claim 13 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin, and topotecan.
- 16. The method according to claim 13 wherein the chemosensitizing reversal agent is selected from the group consisting of fumitremorgin A, fumitremorgin B and fumitremorgin C.
 - 17. The method according to claim 16 wherein the chemosensitizing reversal agent is administered prior to, concurrently with, or after administration of the chemotherapeutic agent.
 - 18. A method of distinguishing P-gp/MRP multiple drug resistance from BCRP or other non-P-gp/non MRP multiple drug resistance which comprises administration of an effective amount of a chemosensitizing reversal agent and a chemotherapeutic agent to which the cancer cells are multiple drug resistant and measuring chemotherapeutic agent accumulations in the cell.

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- 19. The method according to claim 18 wherein the chemotherapeutic agent used is one to which the cancer cells are resistant.
- 20. The method according to claim 18 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin, and topotecan.
 - 21. The method according to claim 18 wherein the chemotherapeutic agent is substituted by a drug surrogate.
- 15 22. The method according to claim 18 wherein the chemosensitizing reversing agent is selected from the group consisting of fumitremorgin A, fumitremorgin B and fumitremorgin C.
 - 23. The method according to claim 22 wherein the chemosensitizing reversal agent is administered prior to, concurrently with, or after administration of the chemotherapeutic agent.
 - 24. A method of determining the presence and magnitude of cancer cell BCRP or other non P-gp/non MRP resistance in cancer cells exhibiting such resistance which comprises administration of an effective amount of a chemosensitizing reversal agent and chemotherapeutic agents to resistant cancer cells from humans and measuring cancer cell survival.
- 25 The method according to claim 24 wherein the chemotherapeutic agent used is one to which the cancer cells are resistant.
 - 26. The method according to claim 24 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin, and topotecan.
- 27. The method according to claim 24 wherein the chemosensitizing reversal agent is selected from the group consisting of fumitremorgin A, fumitremorgin B and fumitremorgin C.
- 28. The method according to claim 27 wherein the chemosensitizing reversal agent is administered prior to, concurrently with, or after administration of the chemotherapeutic agent.

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- 29. A method of reversing BCRP or other non P-gp/non MRP resistance to chemotherapeutic agents in a mammal which comprises administration of an effective amount of a chemosensitizing reversal agent to a mammal in need thereof having a BCRP or other non-P-gp/non MRP resistant cancer.
- 30. The method according to claim 29 wherein the chemotherapeutic agent used is one to which the cancer cells are resistant.
- 31. The method according to claim 29 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin, and topotecan.
 - 32. The method according to claim 29 wherein the chemosensitizing reversal agent is selected from the group consisting of fumitremorgin A, fumitremorgin B and fumitremorgin C.
 - 33. The method according to claim 32 wherein the chemosensitizing reversal agent is administered prior to, concurrently with, or after administration of the chemotherapeutic agent.
- 25 34. A method of treatment of BCRP or other non P-gp/non MRP multiple drug resistant phenotype cancer cells which comprises administration of an effective amount of a chemosensitizing reversal agent and a chemotherapeutic agent to which the cancer is resistant.
- 35. The method according to claim 34 wherein the chemotherapeutic agent used is one to which the cancer cells are resistant.
 - 36. The method according to claim 34 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin, and topotecan.
 - 37. The method according to claim 34 wherein the chemosensitizing reversal agent is selected from the group consisting of fumitremorgin A, fumitremorgin B and fumitremorgin C.

- 38. The method according to claim 37 wherein the chemosensitizing reversal agent is administered prior to, concurrently with, or after administration of the chemotherapeutic agent.
- 39. The method of inhibiting efflux of a chemotherapeutic agent in a mammal in need thereof which comprises administration of an effective amount of a chemosensitizing reversal agent and a chemotherapeutic agent to which the cancer is resistant.
 - 40. The method according to claim 39 wherein the chemotherapeutic agent used is one to which the cancer cells show resistance to the BCRP or other non P-gp/MRP-mediated phenotype.
 - 41. The method according to claim 39 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin, and topotecan.
- 42. The method according to claim 39 wherein the chemosensitizing reversal agent is selected from the group consisting of fumitremorgin A, fumitremorgin B and fumitremorgin C.
- 43. The method according to claim 42 wherein the chemosensitizing reversal agent is administered prior to, concurrently with, or after administration of the chemotherapeutic agent.
 - 44. A compound having the Formula (I)

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wherein:

n is an integer of 0, 1, or 2;

R¹ is hydrogen or alkoxy of 1 to 10 carbon atoms;

R² is hydrogen or alkenyl of 2 to 10 carbon atoms;

 R^3 is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms, $R^7NH(CH2)v-$ or

m is an integer of 1 to 6;

v is an integer of 1 to 4;

 R^4 , R^5 and R^6 are hydrogen;

 \mathbb{R}^7 is \mathbb{H} or

 $R^{\mbox{\it 8}}$ is selected from alkyl of 1 to 10 carbon atoms, $\mbox{-(CH}_2)_{m} CO_2 H,$

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$$-O-CH_2$$
 and $-(CH_2)_m$

with the proviso that n is not 1 when

 R^1 is H or CH_3O -;

 R^2 is H or

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$$R^3$$
 is
$$CH_3 \qquad CH_3 \qquad CH_3 \qquad ; \quad \text{and} \quad$$

2.50

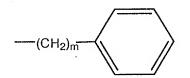
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- 5 R⁴, R⁵ and R⁶ are hydrogen; or a pharmaceutically acceptable salt thereof.
 - 45. A compound according to claim 44 wherein
- R¹ is hydrogen or alkoxy of 1 to 5 carbon atoms;

 R² is hydrogen or alkenyl of 2 to 6 carbon atoms;

 R³ is hydrogen, alkyl of 1 to 9 carbon atoms, alkenyl of 2 to 6 carbon atoms,

 R⁷NH(CH2)v- or



m is an integer of 1 to 5; v is an integer of 1 to 3;

or a pharmaceutically acceptable salt thereof.

46. A compound according to claim 44 wherein R³, R⁴ and R⁵ are are independently (R) or (S); or a pharmaceutically acceptable salt thereof.

47. A compound according to claim 44 wherein R¹ is hydrogen or CH₃O-;
R² is hydrogen or 3-methyl-2-buten-1-yl;
R³ is hydrogen or (R) or (S) 2-methylpropyl, 2-methyl-2-propenyl, nonanyl, 5-phenylpentyl, or R²NHCH₂CH₂CH₂- where R² is hydrogen, acetyl, butyryl, succinoyl, or 3-(2-pyrrolidinyl)propionyl;
R⁴ and R⁵ independently are (R) or (S) hydrogen;
or a pharmaceutically acceptable salt thereof.

48. The compound of claim 44 which is selected from the group consisting of (5aS,12R,14aR)-12-isobutyl-1,2,3,5a,6,11,12,14a-octahydro-5H,14H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione, (5aS,12S,14aR)-12-isobutyl-1,2,3,5a,6,11,12,14a-octahydro-5H,14H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione,

(5aR,12R,14aR)-12-isobutyl-1,2,3,5a,6,11,12,14a-octahydro-5H,14Hpyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione, (5aR,12S,14aR)-12-isobutyl-1,2,3,5a,6,11,12,14a-octahydro-5H,14Hpyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione, (6aS,13R,15aS)-13-isobutyl-1,2,3,4,6a,7,12,13,15a-nonahydro-6H,15Hpyrido[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-6H,15H-dione, 10 (6aS,13S,15aS)-13-isobutyl-1,2,3,4,6a,7,12,13,15a-nonahydro-6H,15Hpyrido[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-6H,15H-dione, (6aR,13R,15aS)-13-isobutyl-1,2,3,4,6a,7,12,13,15a-nonahydro-6H,15Hpyrido[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-6H,15H-dione, (6aR,13S,15aS)-13-isobutyl-1,2,3,4,6a,7,12,13,15a-nonahydro-6H,15H-15 pyrido[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-6H,15H-dione, (6aS,13R,15aR)-13-isobutyl-1,2,3,4,6a,7,12,13,15a-nonahydro-6H,15Hpyrido[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-6H,15H-dione, (6aS,13S,15aR)-13-isobutyl-1,2,3,4,6a,7,12,13,15a-nonahydro-6H,15Hpyrido[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-6H,15H-dione, 20 (6aR,13R,15aR)-13-isobutyl-1,2,3,4,6a,7,12,13,15a-nonahydro-6H,15Hpyrido[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-6H,15H-dione, (6aR,13S,15aR)-13-isobutyl-1,2,3,4,6a,7,12,13,15a-nonahydro-6H,15Hpyrido[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-6H,15H-dione, (4aS,11R,13aS)-11-isobutyl-1,4a,5,10,11,13a-hexahydro-4H-25 azeto[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-4,13(2H)-dione, (4aS,11S,13aS)-11-isobutyl-1,4a,5,10,11,13a-hexahydro-4Hazeto[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-4,13(2H)-dione, (5aS,12R,14aS)-12-(5-phenylpentyl)-1,2,3,5a,6,11,12,14a-octahydro-5H,14Hpyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione, 30 (5aS,12S,14aS)-12-(5-phenylpentyl)-1,2,3,5a,6,11,12,14a-octahydro-5H,14Hpyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione; benzyl 3-[(5aS,12R,14aS)-5,14-dioxo-2,3,5a,6,11,12,14,14a-octahydro-1H,5Hpyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indol-12-yl]propylcarbamate, benzyl 3-[(5aS,12S,14aS)-5,14-dioxo-2,3,5a,6,11,12,14,14a-octahydro-1H,5H-35 pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indol-12-yl]propylcarbamate. (5aS,14aS)-1,2,3,5a,6,11,12,14a-octahydro-5H,14Hpyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione. (5aS,12S,14aS)-12-methyl-1,2,3,5a,6,11,12,14a-octahydro-5H,14H-

pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione.

5 (5aS,12S,14aS)-12-nonyl-1,2,3,5a,6,11,12,14a-octahydro-5H,14H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione, (5aS,12R,14aS)-12-(3-aminopropyl)-1,2,3,5a,6,11,12,14a-octahydro-5H,14H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione, (5aS,12S,14aS)-12-(3-aminopropyl)-1,2,3,5a,6,11,12,14a-octahydro-5H,14H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione,

pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione,
N-{3-[(5aS,12S,14aS)-5,14-dioxo-2,3,5a,6,11,12,14,14a-octahydro-1H,5H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indol-12-yl]propyl}acetamide,
N-{3-[(5aS,12S,14aS)-5,14-dioxo-2,3,5a,6,11,12,14,14a-octahydro-1H,5H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indol-12-yl]propyl}butanamide,

4-({3-[(5aS,12S,14aS)-5,14-dioxo-2,3,5a,6,11,12,14,14a-octahydro-1H,5H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indol-12-yl]propyl}amino)-4-oxobutanoic acid,

(2S)-N-{3-[(5aS,12S,14aS)-5,14-dioxo-2,3,5a,6,11,12,14,14a-octahydro-1H,5H-pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indol-12-yl]propyl}pyrrolidine-2-carboxamide and

(5aS,12S,14aS)-9-methoxy-11-(3-methylbut-2-enyl)-12-(2-methylprop-1-enyl)-1,2,3,5a,6,11,12,14a-octahydro-5H,14H-

pyrrolo[1",2":4',5']pyrazino[2',1':6,1]pyrido[3,4-b]indole-5,14-dione or a pharmaceutically acceptable salt thereof.

49. A pharmaceutical composition for resensitizing multiple drug resistant chemotherapeutic agents which comprises a compound of Formula (I)

30 wherein:

n is an integer of 0, 1, or 2;

R¹ is hydrogen or alkoxy of 1 to 10 carbon atoms;

R² is hydrogen or alkenyl of 2 to 10 carbon atoms;

R³ is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms,

 $R^7NH(CH2)v-or$

m is an integer of 1 to 6;

v is an integer of 1 to 4;

 R^4 , R^5 and R^6 are hydrogen;

 $10 R^7$ is H or

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 R^8 is selected from alkyl of 1 to 10 carbon atoms, -(CH₂)_mCO₂H,

$$-O-CH_2 \longrightarrow \text{and} -(CH_2)_m \longrightarrow N$$

with the proviso that n is not 1 when

R¹ is H or CH₃O-;

20 R² is H or

$$\mathbb{R}^3$$
 is

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or CH₃ CH

and

R⁴, R⁵ and R⁶ are hydrogen;

or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

50. A method of treating multiple drug resistance in a mammal in need thereof, which comprises administering to said mammal, a chemotherapeutic agent and an effective amount of a chemosensitizing reversal agent of Formula (I)

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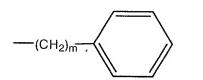
wherein:

n is an integer of 0, 1, or 2;

 R^1 is hydrogen or alkoxy of 1 to 10 carbon atoms;

 ${\sf R}^2$ is hydrogen or alkenyl of 2 to 10 carbon atoms;

 \mathbb{R}^3 is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms, $\mathbb{R}^7 \mathrm{NH}(\mathrm{CH2}) v-$ or



m is an integer of 1 to 6;

v is an integer of 1 to 4;

R⁴, R⁵ and R⁶ are hydrogen;

 R^7 is H or

 R^8 is selected from alkyl of 1 to 10 carbon atoms, -(CH₂)_mCO₂H,

$$-$$
O $-$ CH $_2$ and $-$ (CH $_2$) $_m$

25

30

5 with the proviso that n is not 1 when

 R^1 is H or CH_3O -;

10

$$CH_3$$
 CH_3 CH_3 CH_3 ; and

R⁴, R⁵ and R⁶ are hydrogen;

- or a pharmaceutically acceptable salt thereof; said chemosensitizing reversal agent being administered in an effective amount to increase the sensitivity of the chemotherapeutic agent to the multiple drug resistant cancer.
- 51. The method of claim 50 wherein the multiple drug resistant cancer is non P-gp/non MRP.
 - 52. The method of claim 50 wherein the multiple drug resistant cancer expresses BCRP.
 - 53. The method of claim 50 wherein the chemotherapeutic agent is selected from the group consisting of mitoxantrone, doxorubicin and topotecan.
 - 54. The method according to claim 50 wherein the chemotherapeutic agent used is one to which the cancer cells are resistant.
 - 55. The method according to claim 2 wherein the chemosensitizing reversal agent is a compound having the Formula (I)

wherein:

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n is an integer of 0, 1, or 2;

 R^1 is hydrogen or alkoxy of 1 to 10 carbon atoms;

0 R^2 is hydrogen or alkenyl of 2 to 10 carbon atoms; R^3 is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms, $R^7NH(CH2)v-$ or

m is an integer of 1 to 6; v is an integer of 1 to 4; R⁴, R⁵ and R⁶ are hydrogen; R⁷ is H or

20 R^8 is selected from alkyl of 1 to 10 carbon atoms, -(CH₂)_mCO₂H,

$$-$$
O $-$ CH $_2$ and $-$ (CH $_2$) $_m$

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with the proviso that n is not 1 when

 R^1 is H or CH_3O -;

 R^2 is H or

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$$R^3$$
 is
$$CH_3 \qquad CH_3 \qquad CH_3 \qquad ; \quad and \quad ;$$

 R^4 , R^5 and R^6 are hydrogen; or a pharmaceutically acceptable salt thereof.

56. The method according to claim 8 wherein the chemosensitizing reversal agent is selected from a compound having the Formula (I)

wherein:

n is an integer of 0, 1, or 2;

R¹ is hydrogen or alkoxy of 1 to 10 carbon atoms;

 R^2 is hydrogen or alkenyl of 2 to 10 carbon atoms;

 R^3 is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms, $R^7NH(CH2)v-$ or

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- 5 m is an integer of 1 to 6;
 - v is an integer of 1 to 4; R^4 , R^5 and R^6 are hydrogen;

 R^7 is H or

10 ${\rm R}^8$ is selected from alkyl of 1 to 10 carbon atoms, -(CH₂)_mCO₂H,

$$-$$
O $-$ CH $_2$ $-$ (CH $_2$) $_m$ $-$ (CH $_2$) $_m$ $-$

with the proviso that n is not 1 when

R¹ is H or CH₃O-;

 \mathbb{R}^2 is H or

$$R^3$$
 is
$$CH_3 \qquad CH_3 \qquad CH_3 \qquad ; \quad and \quad$$

- 25 R⁴, R⁵ and R⁶ are hydrogen; or a pharmaceutically acceptable salt thereof.
 - 57. The method according to claim 13 wherein the chemosensitizing reversal agent is selected from a compound having the Formula (I)

wherein:

5

n is an integer of 0, 1, or 2;

 R^1 is hydrogen or alkoxy of 1 to 10 carbon atoms;

10 \mathbb{R}^2 is hydrogen or alkenyl of 2 to 10 carbon atoms; \mathbb{R}^3 is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms, $\mathbb{R}^7 \mathrm{NH}(\mathrm{CH2}) \mathrm{v-or}$

m is an integer of 1 to 6;

v is an integer of 1 to 4;

 R^4 , R^5 and R^6 are hydrogen;

 R^7 is H or

 20 R⁸ is selected from alkyl of 1 to 10 carbon atoms, $-(CH_2)_mCO_2H$,

$$-$$
O $-$ CH $_2$ and $-$ (CH $_2$) $_m$

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with the proviso that n is not 1 when

R¹ is H or CH₃O-;

 R^2 is H or

wir.

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$$R^3$$
 is or CH_3 CH_3 CH_3 ; and

 R^4, R^5 and R^6 are hydrogen; or a pharmaceutically acceptable salt thereof.

58. The method according to claim 18 wherein the chemosensitizing reversing agent is selected from a compound having the Formula (I)

wherein:

n is an integer of 0, 1, or 2;

20 R¹ is hydrogen or alkoxy of 1 to 10 carbon atoms;

 R^2 is hydrogen or alkenyl of 2 to 10 carbon atoms;

R³ is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms,

R⁷NH(CH2)v- or

m is an integer of 1 to 6;

5 v is an integer of 1 to 4;

 \mathbb{R}^4 , \mathbb{R}^5 and \mathbb{R}^6 are hydrogen;

$$\mathbb{R}^7$$
 is H or

 $R^{\mbox{\it 8}}$ is selected from alkyl of 1 to 10 carbon atoms, $\mbox{-(CH}_2)_{m} CO_2 H,$

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$$-$$
O $-$ CH $_2$ and $-$ (CH $_2$) $_m$

with the proviso that n is not 1 when

 R^1 is H or CH_3O -;

$$R^2$$
 is H or

20

$$R^3$$
 is or CH_3 CH_3 CH_3 ; and

R⁴, R⁵ and R⁶ are hydrogen;

- or a pharmaceutically acceptable salt thereof.
 - 59. The method according to claim 24 wherein the chemosensitizing reversal agent is selected from a compound having the Formula (I)

$$\begin{array}{c|c}
R^4 & R^5 & O \\
N & N & N & N
\end{array}$$
(I)

wherein:

5

n is an integer of 0, 1, or 2;

 \mathbb{R}^1 is hydrogen or alkoxy of 1 to 10 carbon atoms;

10 R² is hydrogen or alkenyl of 2 to 10 carbon atoms; R³ is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms, R⁷NH(CH2)v- or

m is an integer of 1 to 6; v is an integer of 1 to 4; R⁴, R⁵ and R⁶ are hydrogen; R⁷ is H or

20 R^8 is selected from alkyl of 1 to 10 carbon atoms, -(CH₂)_mCO₂H,

$$-$$
O $-$ CH $_2$ and $-$ (CH $_2$) $_{rn}$

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with the proviso that n is not 1 when R^1 is H or CH_3O -; R^2 is H or

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$$R^3$$
 is
$$CH_3 \qquad CH_3 \qquad CH_3 \qquad ; \quad and \quad CH_4 \qquad ; \quad and \quad CH_5 \qquad ; \quad and$$

 $\mathbb{R}^4, \mathbb{R}^5$ and \mathbb{R}^6 are hydrogen; or a pharmaceutically acceptable salt thereof.

60. The method according to claim 29 wherein the chemosensitizing reversal agent is selected from a compound having the Formula (I)

wherein:

n is an integer of 0, 1, or 2;

 R^{1} is hydrogen or alkoxy of 1 to 10 carbon atoms;

 ${\rm R}^2$ is hydrogen or alkenyl of 2 to 10 carbon atoms;

R³ is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms, R⁷NH(CH2)v- or

m is an integer of 1 to 6;

5 v is an integer of 1 to 4;

R⁴, R⁵ and R⁶ are hydrogen;

$$R^7$$
 is H or

 R^{8} is selected from alkyl of 1 to 10 carbon atoms, -(CH $_{\!\scriptscriptstyle 2})_{\!\scriptscriptstyle m}\!CO_{\!\scriptscriptstyle 2}\!H$,

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$$-$$
O $-$ CH $_2$ $-$ Q $-$ Aand $-$ (CH $_2$) $_m$ $-$ V

with the proviso that n is not 1 when

 R^1 is H or CH_3O -;

$$\mathbb{R}^2$$
 is H or

20

$$R^3$$
 is
$$CH_3 CH_3 CH_3 ; and$$

 R^4 , R^5 and R^6 are hydrogen;

- or a pharmaceutically acceptable salt thereof.
 - 61. The method according to claim 34 wherein the chemosensitizing reversal agent is selected from a compound having the Formula (I)

wherein:

5

n is an integer of 0, 1, or 2;

 R^1 is hydrogen or alkoxy of 1 to 10 carbon atoms;

10 R² is hydrogen or alkenyl of 2 to 10 carbon atoms; R³ is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms,

R⁷NH(CH2)v- or

m is an integer of 1 to 6;

v is an integer of 1 to 4;

R⁴, R⁵ and R⁶ are hydrogen;

 R^7 is H or

20 \mathbb{R}^8 is selected from alkyl of 1 to 10 carbon atoms, $-(CH_2)_mCO_2H$,

$$-O-CH_2$$
 and $-(CH_2)_m$

25

with the proviso that n is not 1 when

 R^1 is H or CH_3O -;

 R^2 is H or

15

20

25

 R^4, R^5 and R^6 are hydrogen; or a pharmaceutically acceptable salt thereof.

62. The method according to claim 39 wherein the chemosensitizing reversal agent is selected from a compound having the Formula (I)

wherein:

n is an integer of 0, 1, or 2;

R¹ is hydrogen or alkoxy of 1 to 10 carbon atoms;

R² is hydrogen or alkenyl of 2 to 10 carbon atoms;

 $\ensuremath{\mathrm{R}}^3$ is hydrogen, alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms,

 $R^7NH(CH2)v-or$

m is an integer of 1 to 6;

5 v is an integer of 1 to 4;

 R^4 , R^5 and R^6 are hydrogen;

$$R^7$$
 is H or

 R^8 is selected from alkyl of 1 to 10 carbon atoms, -(CH₂)_mCO₂H,

10

$$-$$
O-CH₂ and $-$ (CH₂)_m

with the proviso that n is not 1 when

 R^1 is H or CH_3O -;

 R^2 is H or

20

30

 R^4 , R^5 and R^6 are hydrogen;

- or a pharmaceutically acceptable salt thereof.
 - 63. A culture of the organism *Aspergillus fumigatus* having the identifying characteristics of LL-S266, said culture being capable of producing Fumitremorgin A, B and C in recoverable quantity upon fermentation in an aqueous nutrient medium containing assimilable sources of carbon and nitrogen.